



## Going with the flow: Global warming and the challenge of sustaining river ecosystems in monsoonal Asia

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**Author(s):** Dudgeon D  
**Book:** Water Science & Technology: Water Supply  
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### Abstract:

River ecosystems in monsoonal Asia are experiencing human impacts to the detriment of the rich biodiversity they support. Threats include hydrologic alteration, pollution, habitat destruction, overexploitation, and invasive exotic species. Global warming will cause further changes to river ecosystems, and may act synergistically with other threat factors. Significant upward or northward range adjustments by the freshwater biota will be necessary to cope with rising temperatures, but there will be significant constraints upon dispersal ability and availability of suitable habitat for many organisms. Global warming will exacerbate existing impacts of hydrologic alteration because of the adaptive human responses that will be engendered by changes in climate and runoff, particularly dams constructed for hydropower generation, flood protection, water storage, and irrigation. The consequences of further hydrologic alteration and habitat fragmentation will be profound, since almost all ecological processes, material transfers and life-cycle events in the rivers of monsoonal Asia are mediated or controlled by flow. Thus a change in the timing or amounts of flow changes everything. Collaborative research to determine the environmental allocation of water flow needed to maintain ecosystem integrity and sustain biodiversity in the human-dominated rivers of monsoonal Asia should be a priority for ecologists, engineers and water-resource managers.

**Source:** <http://dx.doi.org/10.2166/ws.2007.042>

### Resource Description

#### Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

#### Communication Audience:

audience to whom the resource is directed

Researcher

#### Exposure :

weather or climate related pathway by which climate change affects health

# Climate Change and Human Health Literature Portal

Ecosystem Changes, Food/Water Quality, Food/Water Security

## **Geographic Feature:**

resource focuses on specific type of geography

Freshwater

## **Geographic Location:**

resource focuses on specific location

Non-United States

**Non-United States:** Asia

## **Health Impact:**

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

## **Mitigation/Adaptation:**

mitigation or adaptation strategy is a focus of resource

Adaptation

## **Resource Type:**

format or standard characteristic of resource

Review

## **Timescale:**

time period studied

Time Scale Unspecified